

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

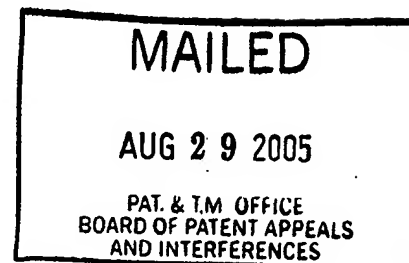
UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte WOLFGANG BRAUER, HERBERT HEIDINGSFELD,
HANS-GEORG HOPPE, WOLFGANG KAUFHOLD, BERNHARD SCHULTE,
JACK C. CHAN, STEVEN C. MANNING and NICHOLAS R. NARDO

Appeal No. 2005-1677
Application No. 10/043,738

ON BRIEF



Before KIMLIN, WALTZ and JEFFREY T. SMITH, Administrative Patent Judges.
JEFFREY T. SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 5 and 7 to 11, which are all of the claims pending in this application. We have jurisdiction under 35 U.S.C. § 134.

BACKGROUND

The Appellants' invention relates to the continuous production of polyurethane elastomers. The process comprises reacting a polyether diol, an organic diisocyanate and a catalyst to form a prepolymer, and reacting the prepolymer with a hydroquinone to form the polyurethane elastomer. (Brief, pp. 2-3). Claim 7, which is representative of the subject matter on appeal, appears below:

7. A continuous process of preparing a thermoplastic polyurethane elastomer consisting of:

(i) forming a prepolymer, at a temperature of 130°C to 250°C, in a reactor selected from the group consisting of a stirred tube reactor and at least one static mixer, by introducing into said reactor,

A) at least one polyether diol having a number average molecular weight (Mn) of 450 to 10,000, and 1.8 to 2.2 Zerewitinoff active hydrogen atoms on average, said polyether diol being preheated to a temperature of 130°C to 230°C prior to introducing said polyether diol into said reactor,

B) at least one organic diisocyanate, said organic diisocyanate being preheated to a temperature of 50°C to 150°C prior to introducing said organic diisocyanate into said reactor, and

10 to 1000 ppm in relation to A) of tin dioctoate as a catalyst; and

(ii) reacting, in an extruder at a temperature of 130°C to 250°C, said prepolymer with,

C) 1,4-di-(2,2'-hydroxyethyl)-hydroquinone, the 1,4-di-(2,2'-hydroxyethyl)-hydroquinone being preheated to a temperature of 130°C to 230°C prior to introducing the 1,4-di-(2,2'-hydroxyethyl)-hydroquinone into said extruder, thereby forming said thermoplastic polyurethane elastomer, with the proviso that the NCO/OH ratio of the reactants A), B) and C) is 0.85 to 1.2, and said thermoplastic polyurethane has a glass transition temperature (T_g) below 50°C,

wherein said thermoplastic polyurethane elastomer optionally comprises at least one auxiliary substance.

CITED PRIOR ART

As evidence of unpatentability, the Examiner relies on the following references:

Shah	3,901,852	Aug. 26, 1975
Muller et al. (Muller)	5,905,133	May 18, 1999

The Examiner entered the following rejection :

Claims 5 and 7 to 11 stand rejected under 35 U.S.C. 103(a) as obvious over the combination of Shah and Muller. (Answer, pp. 3-6).

We have carefully reviewed the claims, specification and applied prior art, including all of the arguments advanced by both the Examiner and Appellants in support of their respective positions. This review leads us to conclude that the Examiner's rejections are well founded.

Rather than reiterate the conflicting viewpoints advanced by the Examiner and the Appellants regarding the above-noted rejection, we make reference to Appellants' Brief filed July 26, 2004, Reply Brief, filed December 06, 2004 and the Examiner's Answer mailed October 19, 2004.

OPINION

We have carefully reviewed the claims, specification and applied prior art, including all of the arguments advanced by both the Examiner and Appellants in support of their respective positions. This review leads us to conclude that the Examiner's § 103 rejection is well founded. See *In re Oetiker*, 977 F.2d 1443, 1445, 24

USPQ2d 1443, 1444 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1471-1472, 223 USPQ 785, 787-788 (Fed. Cir. 1984). We affirm.

The Examiner found that Shah discloses the continuous production of polyurethane elastomers comprising the formation of a prepolymer, comprising a polyether diol, an organic diisocyanate and a catalyst, subsequently reacted with a hydroquinone. (Answer, p. 3). According to the Examiner the various components, which are encompassed by those utilized in the claimed process, may be heated prior to reaction to temperatures which fall within the ranges disclosed in the claimed subject matter. (Answer, p. 3). The Examiner asserts that Shah does not disclose the specific type of reactors which are used in the process. (Answer, p. 3). The Examiner relies on the Muller reference to describe the various type of reactors suitable for production of polyurethane elastomer. (Answer, p. 4). Appellants in the Briefs have not disputed the Examiner's finding regarding the reactants of Shah or the reactors of Muller. (See Briefs generally).

Appellants argue that Shah prefers a one-shot method for producing elastomeric polyurethanes and teaches away from the use of a prepolymer process. (Brief, p. 4).

Appellants' argument is not persuasive since a reference is available for all that it teaches, not just the preferred embodiments, and a preferred embodiment is not a "teaching away" from the unpreferred embodiment. *In re Inland Steel Co.*, 265 F.3d 1354, 1361, 60 USPQ2d 1396, 1401, 1402 (CA FC 2001); *Merck & Co. v. Biocraft Labs., Inc.*, 874 F.2d 804, 807, 10 USPQ2d 1843, 1846 (Fed. Cir. 1989) ("the fact that a

specific [embodiment] is taught to be preferred is not controlling, since all disclosures of the prior art, including unpreferred embodiments, must be considered") (quoting *In re Lamberti*, 545 F.2d 747, 750, 192 UPSQ 278, 280 (CCPA 1976)). Shah also discloses the components can be used in the formation of a prepolymer which is subsequently reacted with the extender diol to form the elastomer. (Col. 5, ll. 19-21). Shah discloses suitable reaction conditions for the various components used to form the polyurethane elastomer. Inclusive therein is heating prior to reacting. (See column 4).

Regarding the Muller reference Appellants argue that there is no motivation to combine the Shah reference with Muller because Shah teaches away from the use of a prepolymer method. (Brief, p. 5).

Appellants' argument is premised on Shah's preference for use of a "one-shot" method. (Note Brief pages 4 and 5). Appellants' argument does not take in to account the discussion in Shah of the suitability of using a prepolymer process. Moreover, the Examiner cited the Muller reference for teaching the various types of reactors suitable when using a prepolymer process. Appellants have not argued that a person of ordinary skill in the art would not have reasonably expected the reactors disclosed by Muller to have been suitable for use with the prepolymer process disclosed by Shah. "The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference Rather, the test is what the combined teachings of those references would have suggested to those of ordinary skill in the art." *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA

1981). See also *In re Sneed*, 710 F.2d 1544, 1550, 218 USPQ 385, 389 (Fed. Cir. 1983) (“[I]t is not necessary that the inventions of the references be physically combinable to render obvious the invention under review.”); and *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973) (“Combining the teachings of references does not involve an ability to combine their specific structures.”).

In light of the foregoing it is our determination that the Examiner has established a *prima facie* case of obviousness with respect to the argued claims on appeal. The rejection of claims 5 and 7 to 11 under 35 U.S.C. 103(a) as obvious over the combination of Shah and Muller is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(iv).

AFFIRMED

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